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NEMATOTOLOGY LITERATURE LIST

1959

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This is a list of publications indexed at the Nematology Section, Crops Research Division, U. S. Department of Agriculture, between November 15, 1958 and November 15, 1959. Many of the papers are listed from the original journals or from reprints received from the authors. Others are listed from abstracting journals or from bibliographies. In many cases, a short note has been added to indicate the nature of the contents of the paper.

Arrangement is alphabetically by authors.

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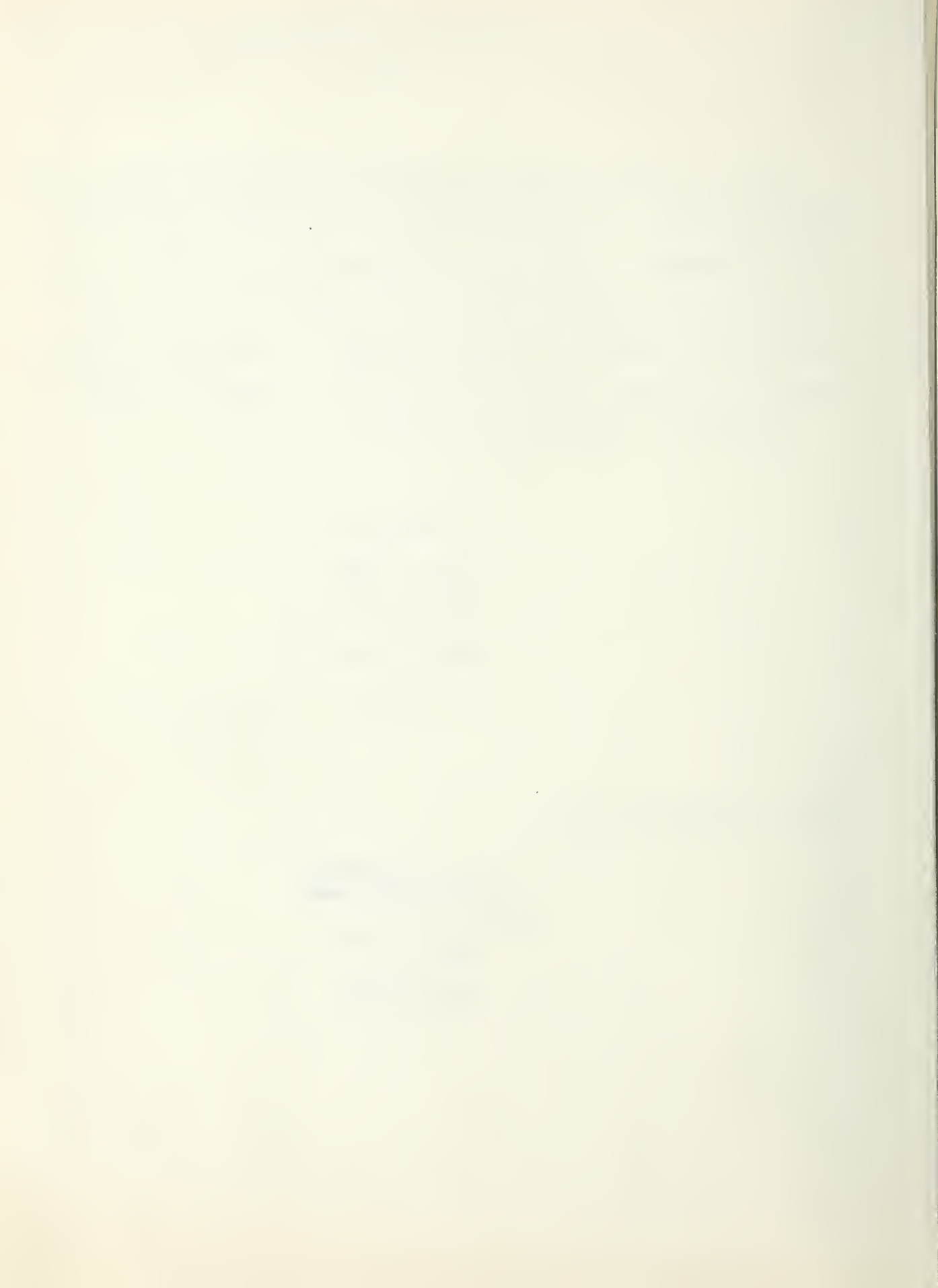
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Adams, R. E. 1958. "Nematodes." W. Va. Agr. Expt. Sta. B. 422:3,7. 311/15

Ahmed, S. 1957. "'Spreading decline' a great threat to citrus industry in Florida." Punjab Fruit J. 21(77):31-32, 24.

Aldrovandi, A. 1958. "Possibility of controlling nematodes of sugar beets." (In Italian.) Agr. delle Venezie 12(8):430-443.

Alexander, Leonard J. 1959. "Progress report of National Screening Committee for disease resistance in the tomato for 1954-1957." Plant Disease Reporter. 43(1):55-65.

Allgén, C. A. 1936. "Die odontophoren." Festschr. 60. Geburtst. Embrik Strand. 2:211-224.

_____. 1936. "Weitere Desmodoren" Festschr. 60. Geburtst. Embrik Strand. 2:224-227.

_____. 1936. "Das Genus Allgēniella Embrik Strand." Festschr. 60. Geburtst. Embrik Strand. 2:227-229.

_____. 1936. "Die Pelagonemen des Mittelmeeres." Festschr. 60. Geburtst. Embrik Strand. 1:266-271.

_____. 1936. "Das Weibchen des Paroncholaimus parpapilliferus Micoletzky." Festschr. 60. Geburtst. Embrik Strand. 1:272-273.

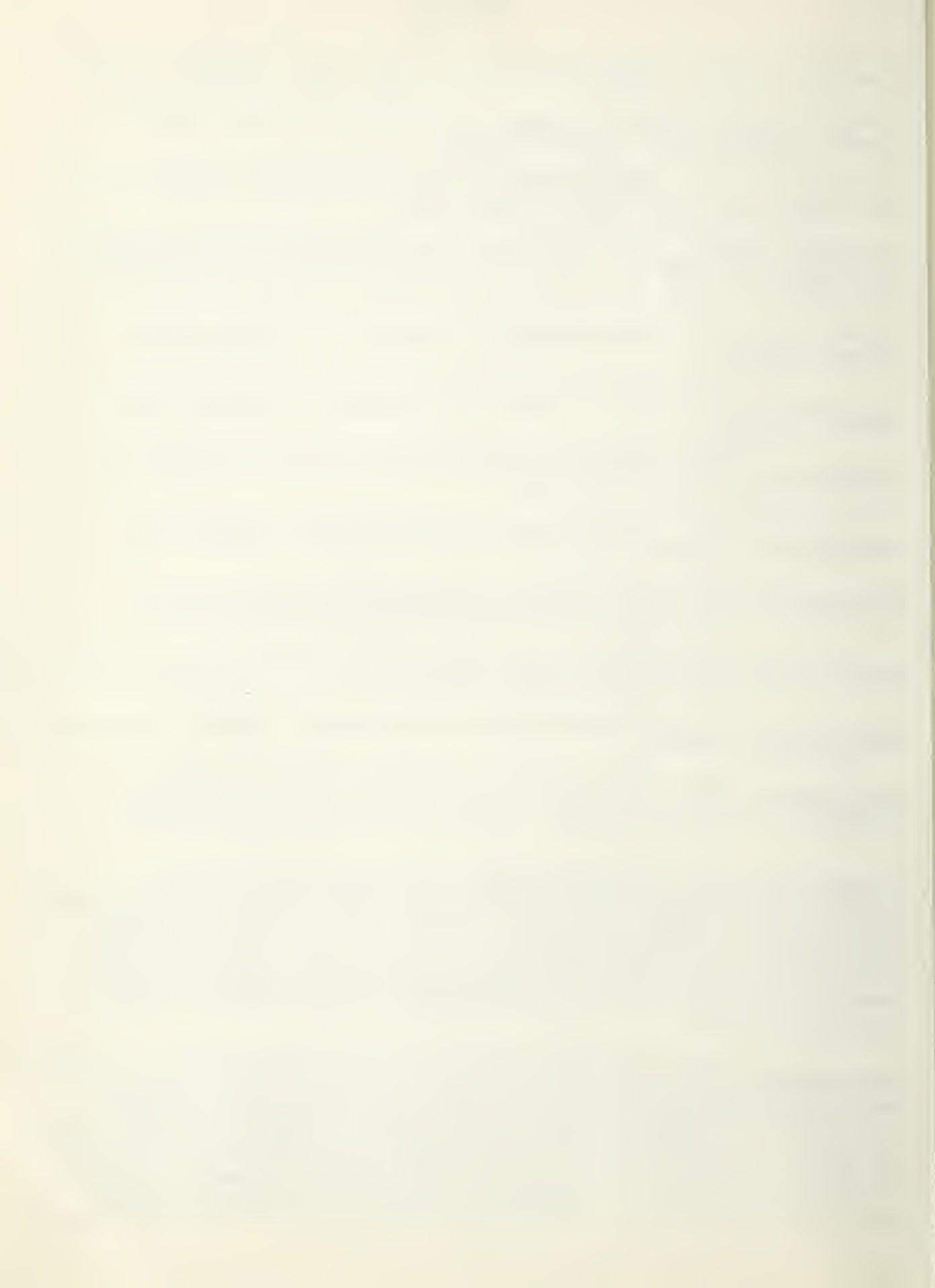
_____. 1939. "Weitere freilebende Nematoden aus dem Vattern (Sudschweden)" Festschr. 60. Geburtst. Embrik Strand. 5:384-394.

_____. 1939. "Die Phanodermen des Mittelmeeres." Festschr. 60. Geburtst. Embrik Strand. 5:394-404.

_____. 1939. "Über einige im reinen Schalensand der Westküste Norwegens frei lebende Nematoden." Festschr. 60. Geburtst. Embrik Strand. 5:404-425.

_____. 1955. "Vergleich zwischen den marinen Nematodenfaunen Norwegens und denen der Atlantikküste Europas." (Comparison between the Norwegian marine nematode found and those of the Atlantic Coast of Europe.) K. Norske Vidensk. Selsk., Forhandl. Trondheim. 28(16):77-83. After briefly mentioning the literature on the marine nematode fauna of the Atlantic coasts of Europe, Allgen tabulates the numbers of Norwegian species and the numbers of those common to the waters of the Atlantic coasts and of Norway, without mentioning any species by name.

_____. 1955. "Vergleich zwischen den marinen Nematodenfaunen Norwegens und denen des Mittelmeers sowie angrenzender nordöstlicher Meeresabschnitte (Marmara--und Schwarzes Meer, Azow'sches Meer und Kinburgsee) I. -- II." (Comparison between the Norwegian marine nematode found and those of the Mediterranean Sea as well as the adjoining northeastern section (Marmara and Black Sea, Azof Sea and Kinburg Sea) I. - II.) K. Norske Vidensk. Selsk., Forhandl. (Trondheim). 28(17):84-88; (18):89-95. I. Allgen gives the numbers of species of marine nematodes described in the literature from various regions of the Mediterranean



and neighbouring waters to the north-east. He gives the percentages of species in the different areas which have also been recorded for Norway. II. In the second part of his paper Allgen gives tables showing the number of known species of marine nematodes recorded in a number of Norwegian localities and the numbers of these species common to the Mediterranean region. Similarly, for a number of places in the Mediterranean and to the north-east he gives the numbers of nematode species recorded and the number of these which are common to Norwegian waters. No names are mentioned.

Allgen, C. A. 1955. "Vergleich zwischen den marinen Nematodenfaunen Norwegens und denen des antarktisch-subantarktischen Gebietes." (Comparison between the Norwegian marine nematode fauna and those of the Antarctic and Subantarctic Region.) K. Norske Vidensk. Selsk., Forhandl. (Trondheim) 28(15):71-76. Allgen reviews the literature dealing with marine nematodes in the Antarctic and sub-Antarctic and gives the numbers of species found both there and in Norwegian waters. It is of great interest to find that many northern species are found also in south polar regions.

_____. 1955(1954). "Die Claparedielliden Norwegens." Kongel. Norske Vidensk. Selsk. Forhandl. 27(8):37-41. Distribution and description of marine forms.

_____. 1955. "Die Desmoscolecidae Norwegens I." (The Desmoscolecidae of Norway. I) (In German) K. Norske Vidensk. Selsk., Forhandl. (Trondheim) 27(12):59-63. Taxonomy marine nematodes, Norway.

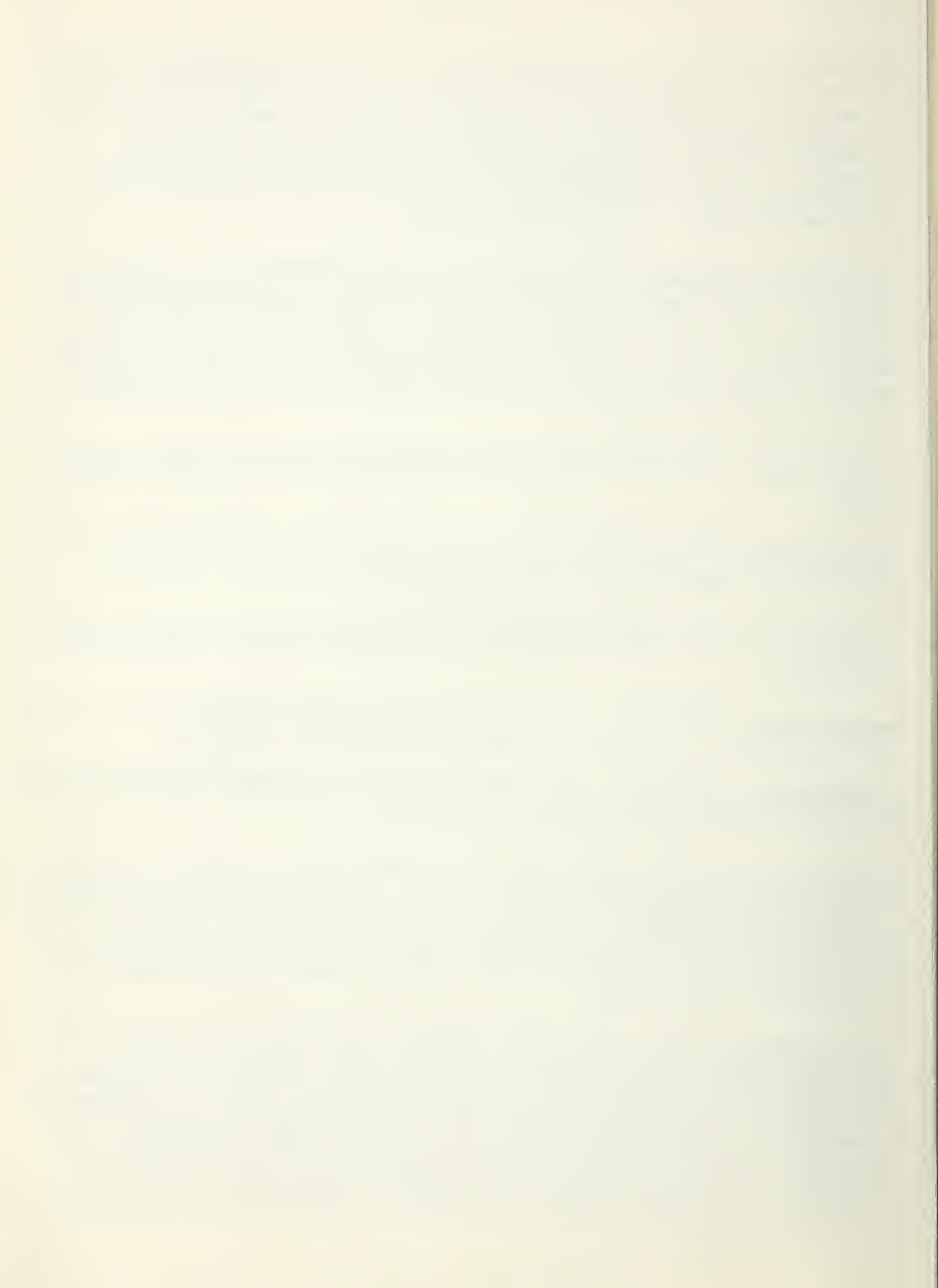
_____. 1955. "Die Desmoscolecidae Norwegens II." (The Desmoscolecidae of Norway. II) (In German) K. Norske Vidensk. Selsk., Forhandl. (Trondheim) 27(13):64-68.

_____. (1954)1955. "Ueber einige weitere Südsee-Nematoden in der Strand-Fauna Norwegens." Kongel. Norske Vidensk. Selsk. Forhandl. 27(15):75-79.

_____. (1954)1955. "Vertreter amerikanischer mariner Nematoden-Gattungen im Faunengebiet Norwegens." Kongel. Norske Vidensk. Selsk. Forhandl. 27(16):80-85. Lists ten marine forms found on Norwegian coast.

_____. 1957. "Zur Kenntnis norwegischer Nematoden XXIV. Über einige für Norwegen neue freilebende marine Nematoden." (On the knowledge of Norwegian nematodes. XXIV. On some free-living marine nematodes new for Norway.) K. Norske Vidensk. Selskabs Forhandl. (Trondheim) 30(4):22-28. New spp. are described in *Leptosomatina appendix-caudatum*, *Thoracostoma sivertseni*, *Phanoderma robustum*, and *Halichoanolaemus labiolaimus*, with descriptive data on *Filoncholaimus filicaudatus*, new to Norway.

_____. 1957. "On a small collection of freeliving marine nematodes from Greenland and some other Arctic Regions." Meddel. Grønland. 159(3):1-41. Some thirty species of freeliving nematode worms are reported from Greenland and other Arctic regions including Labrador, Spitzbergen, Iceland, the Siberian Islands, and elsewhere. The following new species are described: *Leptosomatum microlaimum*, *Thoracostoma multipapillosum*, *T. macrochaetum*, *RITENBENKIA macropapillata*, *Oncholaimus curvicauda*, *Oncholaimellus arcticus*, *Pelagonema papillatum*, *Cyatholaimus unalaskensis*, *Chromadora crassicauda*, *Microlaimus labradorensis* and *APONCHOLAIMUS linhomoeoides*. The distribution of the various species is discussed.



Andersen, Sigurd. 1959. "Resistance of barley to various populations of the cereal root eelworm (*Heterodera major*).¹" *Nematologica* 4(2):91-98.

Anderson, Roy C. 1958. "Method pour l'examen des Nématodes en vue apicale." (Method of examination of nematodes in apical view.) *Ann. Parasitol. Humaine et Comp.* 33(1/2):171-175. The nematode is taken from glycerine and transferred to a thin layer of glycerine jelly spread out on a transparent sheet of plastic; decapitated in the usual way; and the head transferred with the aid of a brush of 2 or 3 bristles to a small drop of melted glycerine jelly, so that the extreme anterior end touches the surface of the sheet. The head is oriented under binocular lens and the coverslip is inverted with forceps on a watch glass. The preparation is examined under a microscope. When the desired position is obtained the coverslip is transferred onto 2 fine glass tubes placed on a slide. The sheet is sealed with melted jelly. This method has been satisfactory for large nematodes as well as for small delicate specimens, such as *Wuchereria* larvae.

Andrassy, I. 1958. "Diplogaster lepidus n. sp. und der Schlüssel der Diplogaster-arten von Unpaarigem Ovar." *Nematologica*. III(4):295-300.

_____. 1958. "Erd- Und Susswassernematoden Aus Bulgarien." *Acta Zoologica*. IV(1-2):1-88. Of the 127 species, one new family, 2 new genera and 20 new species are described.)

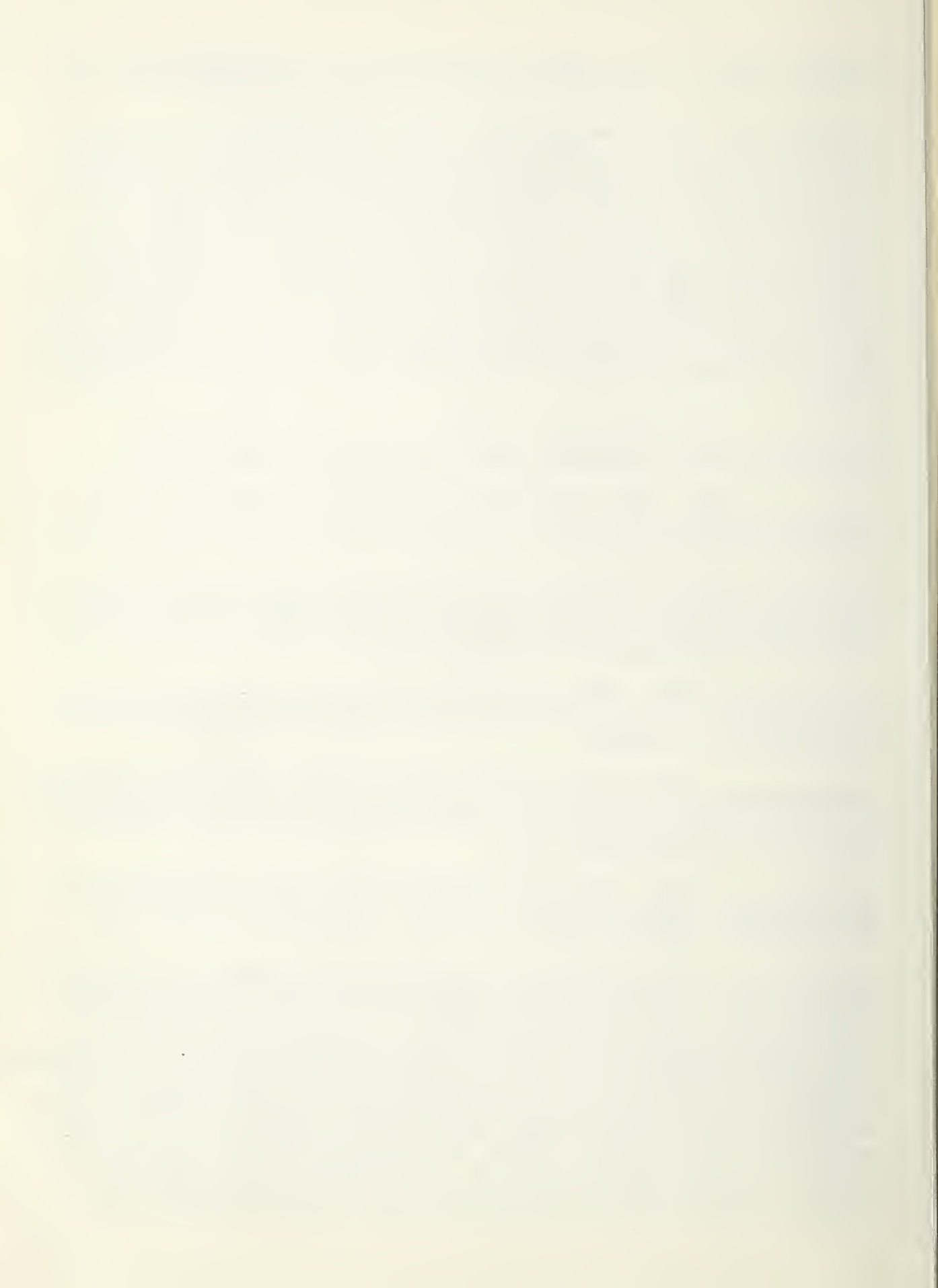
_____. 1958. "Ergebnisse der zoologischen Aufsammlungen des Ungarischen Naturwissenschaftlichen Museums in Agypten im Jahre 1957. 2. Nematoden aus agyptischen Gewässern." *Annales Historico-Naturales Musei Nationalis Hungarici*. 50(n.s.IX):135-150. Nematodes from Egypt.

_____. 1958. "Über das System der Mononchiden (Mononchidae Chitwood, 1937; Nematoda)." *Annales Historico-Naturales Musei Nationalis Hungarici* 50 (n.s.IX):151-171. Taxonomy.

_____. 1959. "Die Mundhöhlentypen der Mononchiden und der Schlüssel der Mylonchulus-Arten (Nematoda)." *Opuscula Zoologica Instituti Zoosystematici Universitatis Budapestinensis*. III(1):3-12. Buccal capsule types of *Mononchus* spp. and Key of the *Mylonchulus* spp.

_____. 1959. "Dorylaimus holdemani n. sp., eine neue Nematoden-Art aus Bulgarien." *Opuscula Zoologica Instituti Zoosystematici Universitatis Budapestinensis*. III(1):13-17.

_____. 1959. "Nematoden Aus Der Tropfsteinhöhle Baradla Bei Aggtelek (Ungarn), Nebst Einer Übersicht Der Bisher Aus Höhlen Bekannten Freilebenden Nematoden-Arten. (Biospeologica Hungarica I.)" *Acta Zoologica Academiae Scientiarum Hungaricae*. IV(3-4):253-277. Free-living limestone-cave nematode fauna. From the Baradla water hole have come many different species of nematodes, ninety-seven subspecies of which are systematically listed at the end of the article. A short description of the conditions of the hole is given as a soil consisting of lime, sand and slate, an air relative humidity of 97-100%, and a nearly constant temperature of 11°C. Next, 17 species are described according to morphology and geographic location. The migration of these animals into this hole is described as occurring in the spring snow melting, when the varieties that live in the mountains flow down in the little glacial streams.



This leads to the question of whether there are any known indigenous species of the hole, and if so, how are they known. A history of the classification of the hole nematodes follows, beginning with the work of G. Joseph (1879), and listing the various species, their discoverers, and the dates of discovery.

Andrassy, I. 1959. "Freilebende Nematoden aus Rumanien." *Annales Universitatis Scientiarum Budapestinensis de Rolando Eötvös nominatae*. 2:3-27. One new genus and four new species described.

Anerud, K. 1957. "Think about crop rotation. (In Swedish.) (Effects on nematodes)" *Sveriges Betodlares Centför. Tidskr.* 3:46

Anon. 1955. "Um Grave Inimigo da Cultura da Batata, a Anguilula da Raiz da Batateira (*Heterodera rostochiensis* Woll.)" (In Portuguese.) *Minist. Economia Direc.- Geral Servicos Agricolas. Conselhos para a Defesa Sanitaria das Culturas*. No. 17, 7 pp.

_____. 1956. "Potato root eelworm." Report. West of Scotland Agr. College. Year 1955-56, p. 44. The section on potato-root eelworm in the report of the Plant Pathology Department refers to the use of a machine for mixing non-volatile materials with soil for control of this eelworm pest. Treatment with yellow oxide of mercury using this machine gave about 75% control of the effective eelworm population on the plants and doubled the yield of potatoes. Reference is also made to experiments with D-D mixture as a nematicide for the control of potato-root eelworm on first-early crops.

_____. 1956. "*Heterodera rostochiensis* Woll. Potato root eelworm in Europe and the Mediterranean Basin in 1955." *Non-Periodical Literature European & Mediterranean Plant Protection Organization - Paris*. 18 pp. The incidence of the potato-root eelworm and the measures taken to control and prevent it in various European and Mediterranean countries during 1955 are described. The pest has been notified for the first time in Norway, Luxembourg and Israel. Its extension to new areas in Algeria, Lower Austria, Belgium, Germany, Greece, Jersey, Guernsey, Iceland, Netherlands, Saar and Sweden are now reported. No infection has yet been reported from Egypt, Italy, Libya, Malta, Portugal, Switzerland, Tunisia, Turkey or Yugoslavia.

_____. 1957. "Potato root eelworm (*Heterodera rostochiensis*) in Europe and the Mediterranean Basin in 1957." *European and Mediterranean Plant Protection Organization*. 13 p. Text in English and French.

_____. 1958. "Potato root eelworm (*Heterodera rostochiensis*) in Europe and the Mediterranean Basin in 1958." 12 p. *European and Mediterranean Plant Protection Organization*.

_____. 1958. "Soil sterilizer for greenhouses." *Jour. Agr. & Food Chemistry*. 6(9):697.

_____. 1958. "Narcissus pests." *Gt. Brit. Ministry of Agriculture, Fisheries & Food*. B. 51, 37 p. Includes insects, mites and nematodes.

_____. 1958. "Foliage and stem nematodes." *New South Wales, Dept. of Agriculture. Biological Br.* 69(3):157-159. *Chrysanthemums, begonias, ferns,*



and gloxinias suffer attacks of certain nematodes which cause brown, watersoaked blotches on leaves, or browning of fern leaflets, doing most damage in cool weather and spreading during damp, humid spells. Stem nematodes affect many pasture plants and weeds, forming stem swellings, stunting the plants and reducing yields. Control measures are outlined.

Anon. 1958. "Root knot or root gall." New South Wales, Dept. of Agriculture Biological Br. Plant Dis. L. 38,8 p. Caused by *Meloidogyne* spp.

_____. 1958. "Nematodes may cause poor summer grass." What's New in Farm Science. Bulletin 532:74-75. A popular, brief note with little information.

_____. 1958. "Fumigation studies on Papaya." Biennial Report 1956-1958 Hawaii Agr. Exp. Sta. (Univ. of Hawaii). p. 47.

_____. 1958. "Vegetable crops." Biennial Report 1956-1958 Hawaii Agr. Exp. Sta. (Univ. of Hawaii). 55-56. Evaluation of efficacy of soil fumigants.

_____. 1958. "Pests of coffee." Coffee in India Planters' Guide and Calendar. 26-28. Brief list of six insects and control of economic importance and "nematodes".

_____. 1958. "The eelworms - (nematodes)." Pests of Coffee and Their Control. Leaflet No. 13, 1-2.

_____. 1958. "Diseases of carrots." Agr. Gazette of New South Wales. 69(8):415-418.

_____. 1958. "Fumigatore Del Terreno Di Practica Realizzazione." (A soil fumigator of practical design.) Inf. fitopat. 8:141.

_____. 1959. "Soil fumigant controls root-knot nematodes." Cotton Gin & Oil Mill Press. 60(18):17.

_____. 1959. "Nematode control for long-staple cotton." Agricultural Research. 8(3):6-7. Re: DBCP treatment effective against root knot.

_____. 1959. "Propose nuclear reactor to sterilize farm land." Science News Letter 75(1):9.

_____. 1959. "Nematode spreads a plant virus." Agricultural Research. 7(7):14.

_____. 1959. "Lower cotton yields controlling nematodes." The Georgia Farmer. p. 15. Short popular farm paper article.

_____. 1959. "Havreådens levevis og bekaempelse." (Oat eelworm distribution and control ?) In Danish. Statens Forsøgsvirksomhed i Plantekultur. 93 (meddelelse) 4 pp.

_____. 1959. "Treated irrigation water controls citrus pest." Science News Letter. 75(24):377.



Anon. 1959. "Nematodes hurt alfalfa stands." Grassland Progress. 1:4.

_____. 1959. "Value of resistance." Agricultural Research (USDept.Agr.).
8(2)45. Re: Alfalfa resist. var. Lahontan ("stem nematodes").

_____. 1959. "Fungus nematode control." Agric. Chemicals. 14(4):56. Loc: England. Field exp. popular type notice. nematodes of potatoes and pea and cereal crops; manure vs. manure + fungus vs. control.

Aschner, M., and Kohn, S. 1958. "The biology of *Harposporium anguillulae*." J. Gen. Microbiol. 19(1):182-189. Use of the fungi for biological control of nematodes.

Atkins, John G. and E. H. Todd. 1959. "White tip disease of rice. III. Yield Tests and Varietal Resistance." Phytopathology. 49(4):189-191.

Aycock, Robert. 1959. "Relation of fungicidal and nematocidal bulb treatments to phytotoxicity and control of basal rot in narcissus." Phytopathology. 49(1):12-16.

Bain, Douglas C. 1959. "Selection for resistance to root knot of white and red clover." Plant Disease Reporter. 43(3):318-322.

Baines, R. C., Foote, F. J. and Martin, J. P. 1957. "Fumigate soil before replanting citrus for the control of the citrus nematode." Calif. U. Agr. Ext. L. 91, 16 p.-folder.

Baines, R. C. and others. 1958. "Nematode control on bearing trees. Calif. Citrog. 43(9):328-329. L. H. Stolzy, O. C. Taylor, R. H. Small, and G. E. Good - all, joint authors.

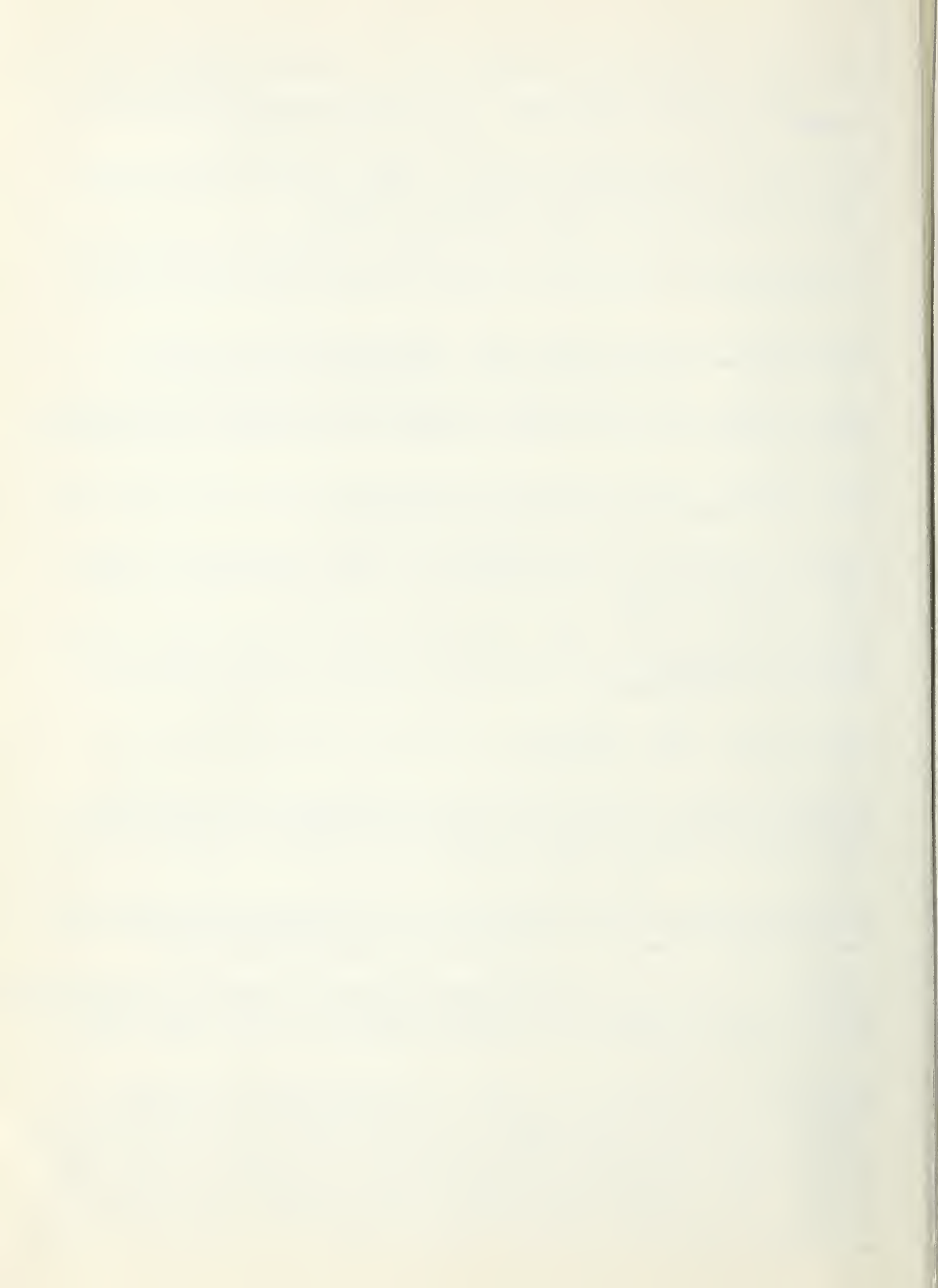
Balachowsky, A. 1949. "Coleopteres scolytides." Faune de France. (Fed. Franc. Soc. Sci. Nat.) 50:320 pp.

Baranovskaia, I. A. 1957. "Natural laws and dynamic factors concerning nematodes of wheat and comparative notes on the dynamics of nematode fauna of rye and maize." Proc. Sci. Conf. All-Union Soc. Helminth., 40th Ann. Gt. Oct. Social Revol. Dec. 11-15. Part I:26-28.

_____. 1958. "Contribution to the knowledge of the genus *Paraphelenchus* (Micoletzky, 1922) Micoletzky, 1925 (Nematoda:Aphelenchidae)." In Russian: English summary p. 19. Zoologicheskii Zhurnal 37(1):13-19.

Barchenko, I. P. 1957. "Sanitary-hygienic appraisal of methods of dehelminthization of vegetables, fruits and berries contaminated by eggs of plant helminths." Proc. Sci. Conf. All-Union Soc. Helminth. 40th Ann. Gt. Oct. Social. Revol. Dec. 11-15. Part I:29-30.

Barham, W. S., and Sasser, J. N. 1956. "Root knot nematode resistance in tomatoes." Assoc. South. Agr. Workers. Proc. 53:150-151. In a preliminary test two tomato lines, Hawaii 5229, Step 234 and the variety Queens were inoculated with *Meloidogyne incognita*, *M. incognita acrita*, *M. arenaria*, *M. javanica* and *M. hapla*. Hawaii 5229 and Step 234 (which is an F_1 hybrid between Hawaii 5229 and Maui) were resistant to all except *M. hapla*, and Queens was susceptible to all species of *Meloidogyne* tested. Resistance appears to be controlled by one or more dominant genes.



Barker, Kenneth R. 1959. "Studies of the biology of the stem nematode." *Phytopathology*. 49(5):315.

Barker, K. R. & J. N. Sasser. 1959. "Biology and control of the stem nematode, *Ditylenchus dipsaci*." *Phytopathology*. 49(10):664-670.

Basir, M. A. 1956. "Oxyuroid parasites of Arthropoda, a monographic study, 1. Thelastomatidae, 2. Oxyuridae." *Zoologica, Orig.-Abhandl.Gesamtgeb. Zool.* 38.Bd., 2.Lief., Heft 106 79 pp., 13 Pl.

Bazan de Segura, C. 1956. "Creciente importancia de los nematodos en el cultivo del algodono en el Peru." *Lima. Estac. Expt. Agr. de La Molina Informe* 30(345):1-3. The importance of nematodes in the cultivation of cotton in Mensual. Peru is discussed. The symptoms produced by parasitic nematodes and by nematodes in conjunction with fungi are described.

Belokurskaia, V. I. 1957. "Investigating means of controlling the potato Heterodera in the vicinity of Lithuanian SSR." *Proc. Sci. Conf. All-Union Soc. Helminth.* 40th Ann. Gt. Oct. Social. Revol. Dec. 11-15. Part I. 33-34.

Benedict, S. H. 1958. "Fertilizer-nematocide mixtures can be profitable." *Agricultural Chemicals* 13(9):25-26. Available data would show that 8 pounds actual Nemagon/acr. is required to give nematode control. This would mean 140 lbs. of 25% Nemagon granules would be incorporated in one ton of fertilizer.

Bergman, B. H. H. 1958. "Het bietencystenaaltje en zijn bestrijding. V. Enige microscopische waarnemingen betreffende de ontwikkeling van larven van Heterodera schachtii in de wortels van vatbare en resistente planten." *Meded. v.h. Instituut v. Rationele Suiker-productie*. 28,149 (3):150-169.

Bergman, B. H. H. and van Duuren, A. J. 1959. "Het Bietencystenaaltje en zijn Bestrijding. VI. De invloed van wortels van waardplanten en excreten hiervan op de bewegingsrichting van larven van Heterodera schachtii in vitro." *Inst. voor Rationele Suikerproductie*. 29(1):24 pp.

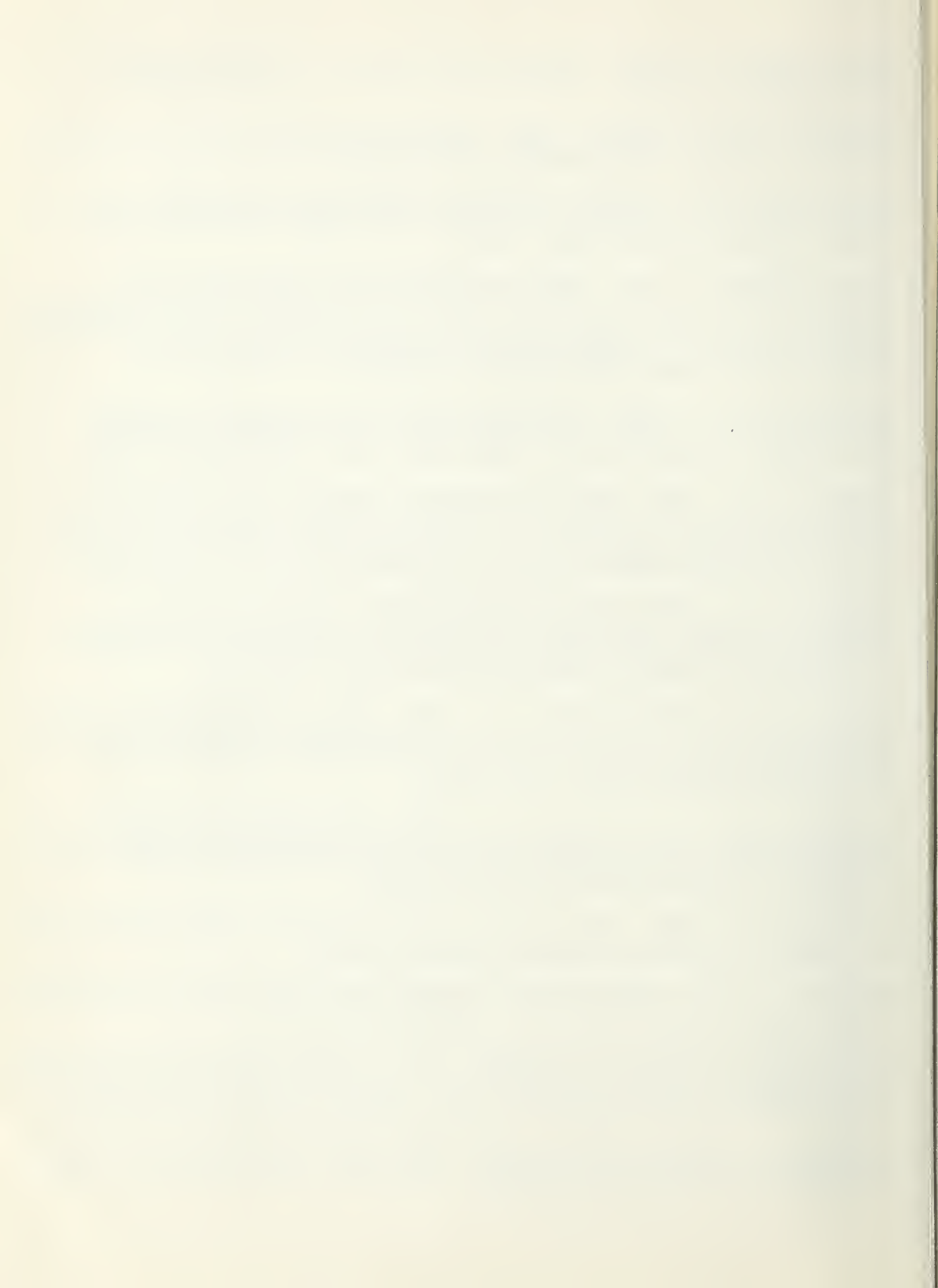
_____. 1959. "Het bietencystenaaltje en zijn bestrijding. VII. De werking van stofwisselingsproducten van sommige micro-organismen op de larven van Heterodera schachtii." *Mededelingen Van Het Instituut Voor Rationele Suikerproductie* 29:27-53.

Berkeley, M. J. 1855. "The roots of a variety of plants...(Vibrio forming cysts on cucumber.)" *Gardeners' Chronicle* (London) (14):220.

Bernard, J. 1958. "Recherches sur les plantes hotes d'une souche de *Ditylenchus dipsaci* Kühn provenant de l'avoine." *Parasitica* 14(1):17-27

Binder, Eugene and Martin T. Hutchinson. 1959. "Further studies concerning the effect of the root-knot nematode *Meloidogyne incognita* acrita on the susceptibility of the Chesapeake tomato to fusarium wilt." *Plant Dis. Reporter* 43(9):972-978.

Bindra, O. S., and S. U. Kittur. 1956 (1957). *Mermis* sp.(Nematoda) parasitizing caterpillars of *Amsacta moorei* Butler." *Indian Jour. Ent.* 18:462-463. A. moorei is a serious pest of maize and pulses.



Bingefors, S. 1958. "Is the alfalfa nematode *Ditylenchus dipsaci* spread through imported seed?" (In Swedish) *Svensk Frötidn.* 27(10):109-114.

Birchfield, W. 1957. "Nematology Department. Special Projects." *Bull. State Plant Board of Florida.* Bull. 11-A 2:108-111.

Birchfield, Wray, Cowperthwaite, W. G., Poucher, C., and McNamee, J. M. 1959. "Sampling "pulled and treated" areas for the burrowing nema *Radopholus similis* (Cobb) Thorne." *Pl. Dis. Repr.* 43(1):41-46.

Bird, Alan F. 1959. "Development of the root-knot nematodes *Meloidogyne javanica* (Treub) and *Meloidogyne hapla* Chitwood in the tomato." *Nematologica.* 4(1) (2 Plates) 31-42.

Blake, C. D. 1958. "Plant parasitic nematodes." *Agr. Gaz. N.S. Wales* 69(7):360-365.

Blodgett, E. C. 1959. "A spreading threat; nematode damage." *West. Fruit Grower* 13(5):19.

Bloom, J. R. and H. B. Couch. 1959. "Influence of soil moisture on root-knot development in tomato." *Phytopathology.* 49(9):534.

Bosher, J. E. 1957. "The use of pesticides in the control of nematodes in B. C." (Vancouver, B.C.) *Agr. Pesticide Tech. Soc. Proc.* 4:33-35.

Boswell, V. R., Doolittle, S. P., Pultz, L. M., Taylor, A. L. and Campbell, R.E. 1959. "Pepper production, disease and insect control." *Farm. Bulletin (U.S.D.A.)* #2051. 33 pp.

Brande, van den, J., J. D'Herde and A. Gillard. 1958. "Onderzoek naar de werking van Nematiciden op luchtdroge en bevochtigde cysten van *Heterodera*." *Mededelingen van de Landbouwhogeschool en de Opzoekingsstations van de Staat Te Gent.* XXIII(3-4):618-627. Re: influence of moisture content of cysts upon fumigation effectiveness.

Brande, van den, J., and J. D'Herde. 1958. "Bestrijding van Planten-Parasiterende Aaltjes in Land-en Tuinbouw." (Pending further information) 23(1-2):18 pgs. Re: fumigation expts. of *H. rostochiensis* on potatoes and of cysts adhering to gloxinia and begonia tubers; methods of heating gr. soil electrically. Illustration of soil washing apparatus. In Flemish-Dutch

Braun, A. J. 1957. "Do nematodes threaten the small fruit business?" *Proc. of the N. Y. State Horticultural Society.* 102nd Annual Meeting. 101-104. Braun lists the genera of plant-parasitic nematodes associated with strawberries, raspberries, blackberries and grapes in the U.S.A. in general and (including blackberries) in New York State in particular. *Pratylenchus* is the most prevalent genus on all counts. With *Meloidogyne* it is regarded as the most important generally and in the State, although most infestations of the latter genus are regarded as having been brought in on the strawberry planting stock (except on Long Island, where root-knot may be more firmly established) and the genus is not listed as associated with the other fruits in N.Y. Other genera for which data are given are *Xiphinema*, *Tylenchorhynchus*, *Helicotylenchus*, *Criconemoides*, *Hoplolaimus*, *Paratylenchus*, *Trichodorus*, *Belonolaimus*, *Aphelenchoides* and *Ditylenchus*.

Breece, James R. and W. H. Hart. 1959. "A possible association of nematodes with the spread of peach yellow bud mosaic virus." 1959. Plant Dis. Reprtr. 43(9):989-990.

Briushkova, F. I., and Kalugin, V. I. 1958. "Stem nematode of potatoes." In Russian. In. Kartofel'; peredovoi opyt i dostizheniia nauki, p. 335-35. Moskva Gosudarstvennoe Izdatel'stvo Sel'skokhoziaistvennoi Literatury.

Brown, A. L., Jurinak, J. J. and Martin, P. E. 1958. "Relation of soil properties to Br uptake by plants following soil fumigation with ethylene dibromide." Soil Science. 86:136-139.

Brown, E. B. 1958. "Pea root eelworm in the eastern counties of England." Nematologica III(4):257-268.

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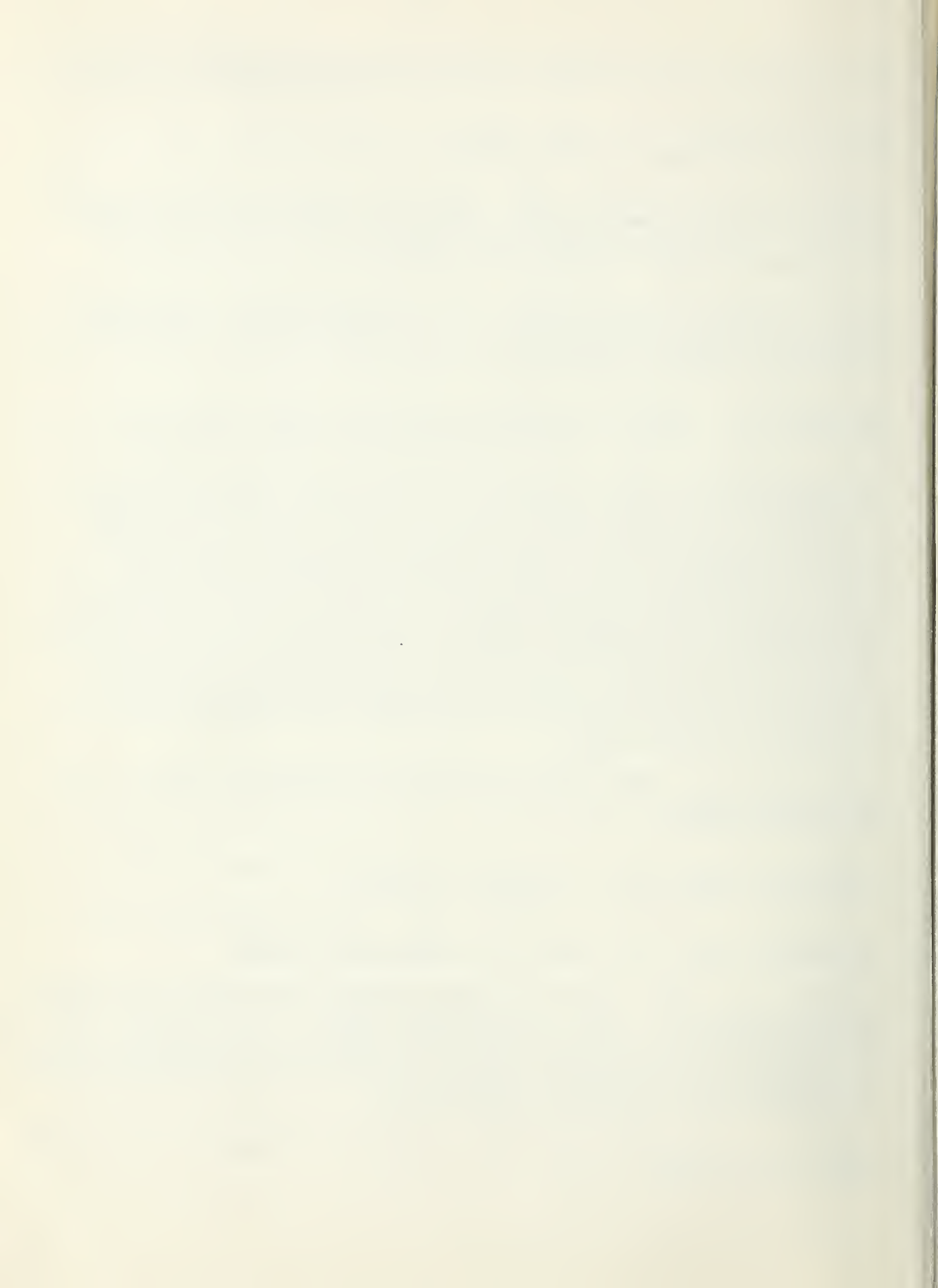
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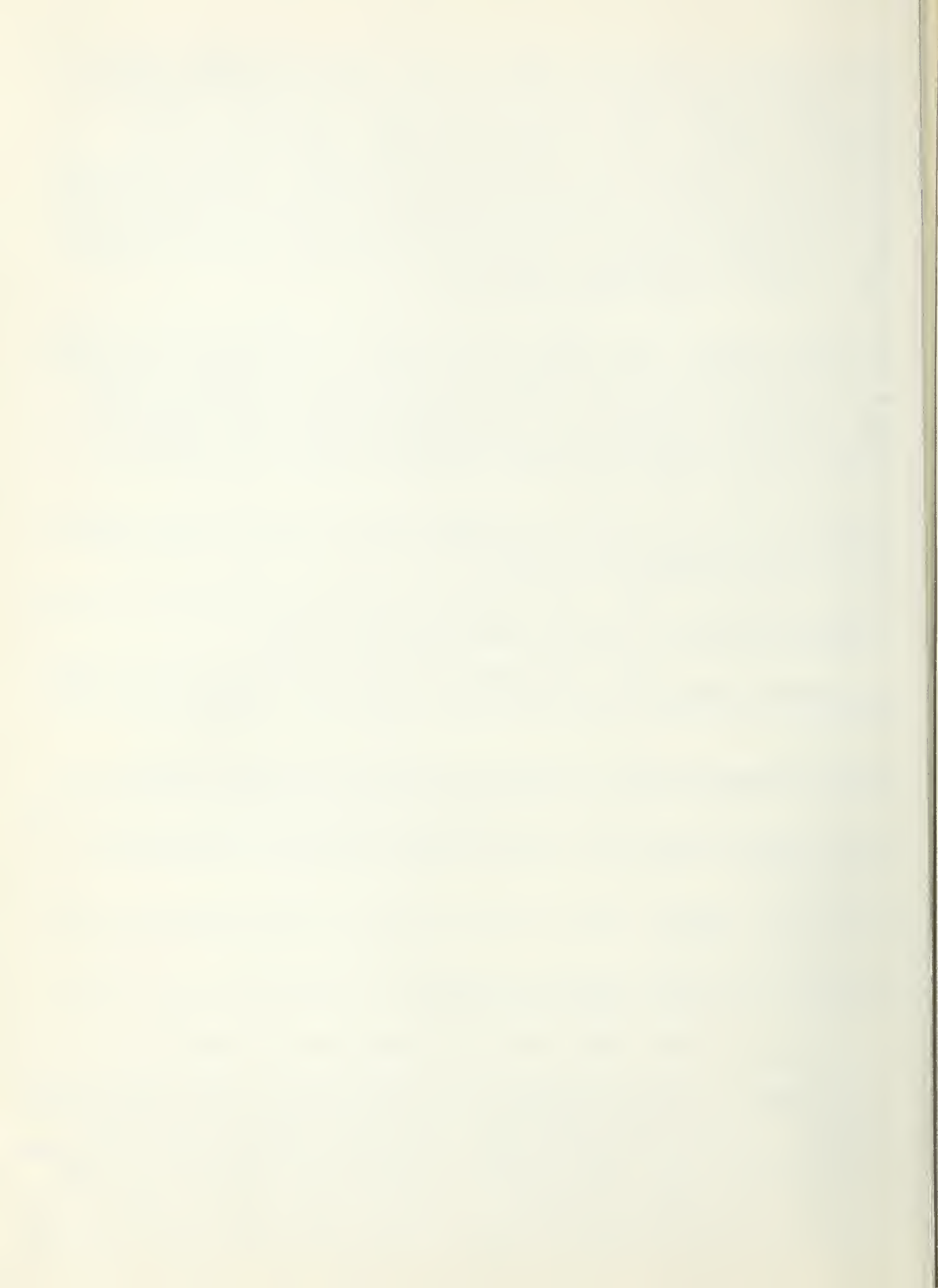
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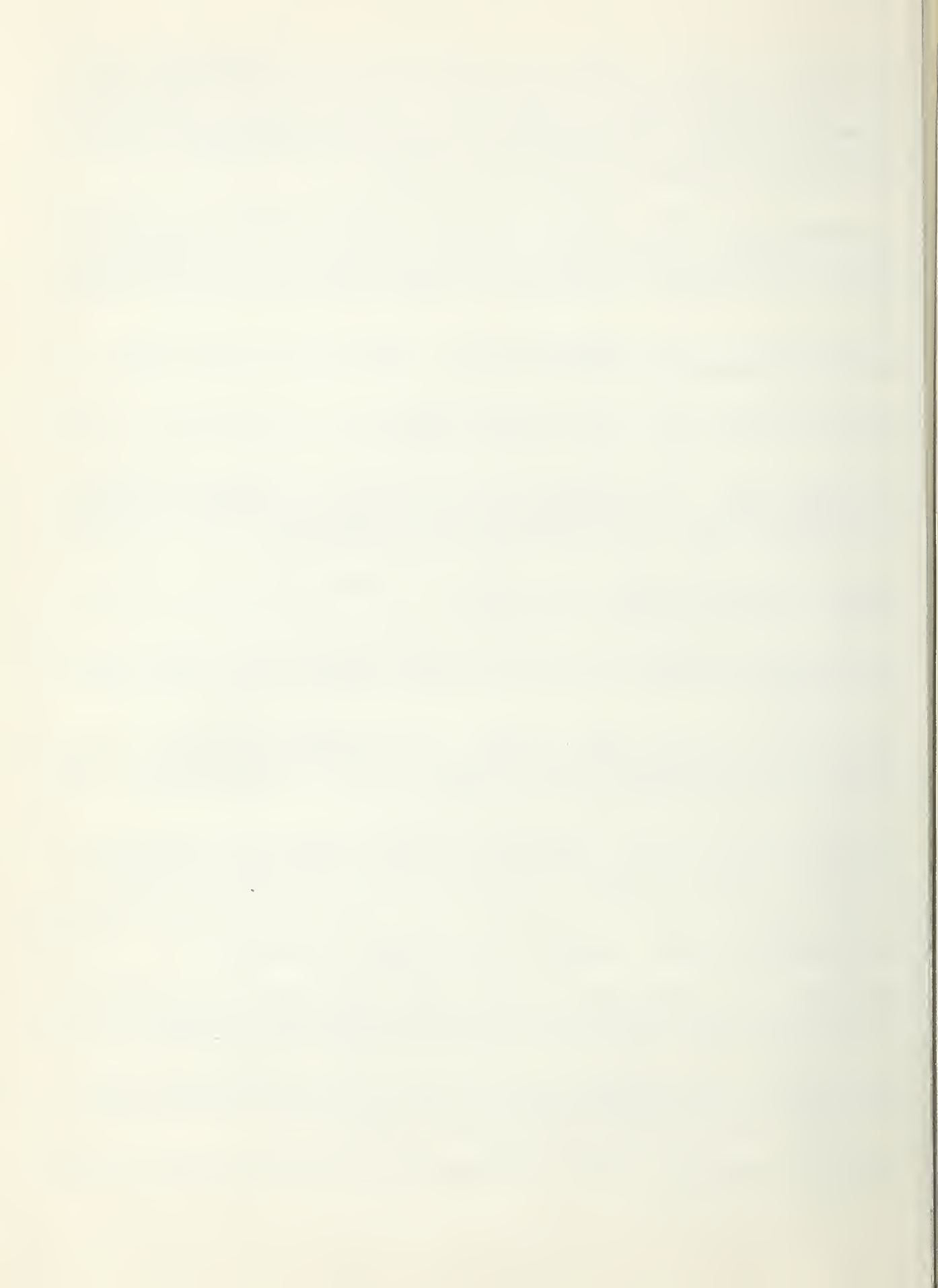
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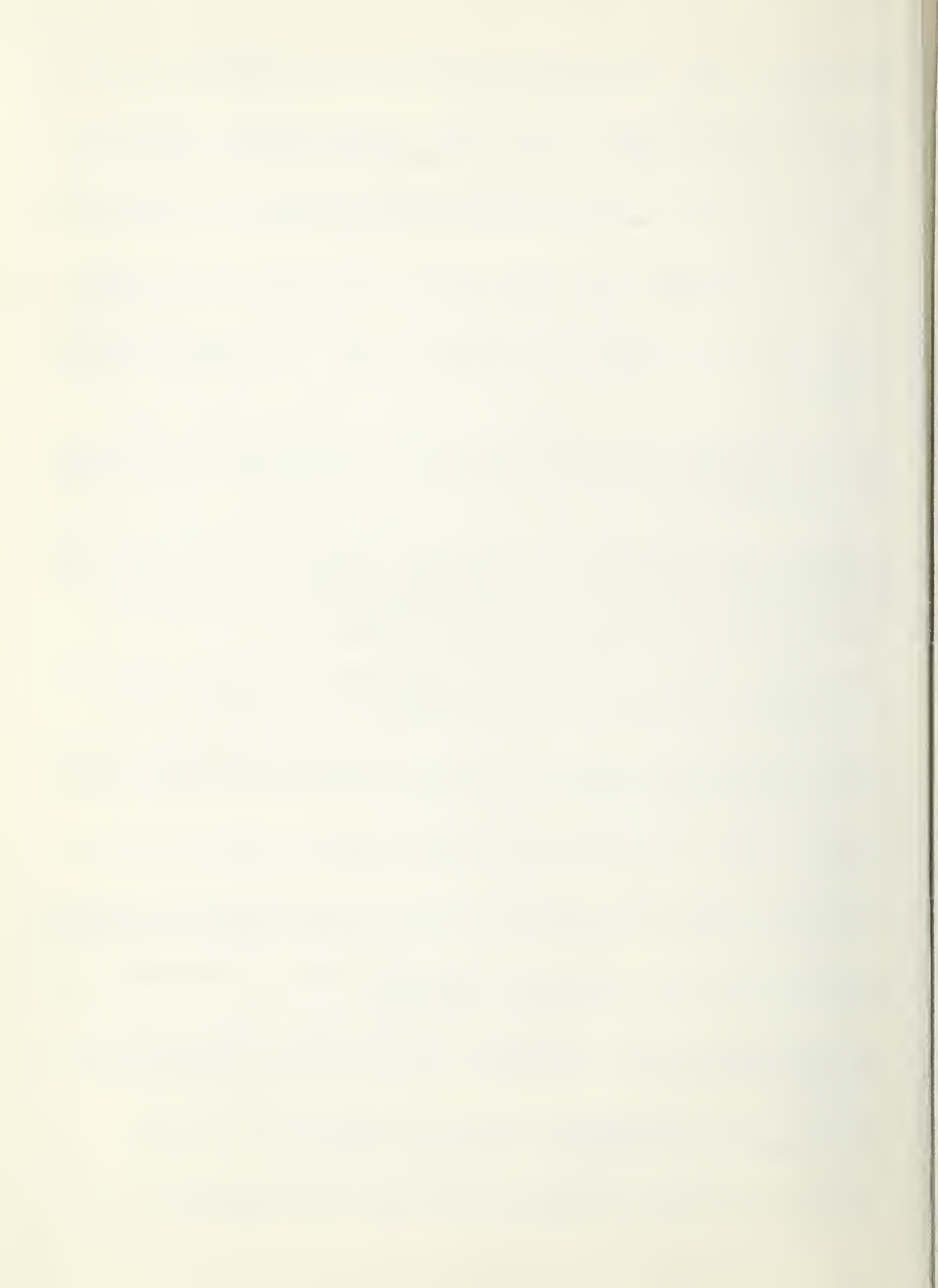
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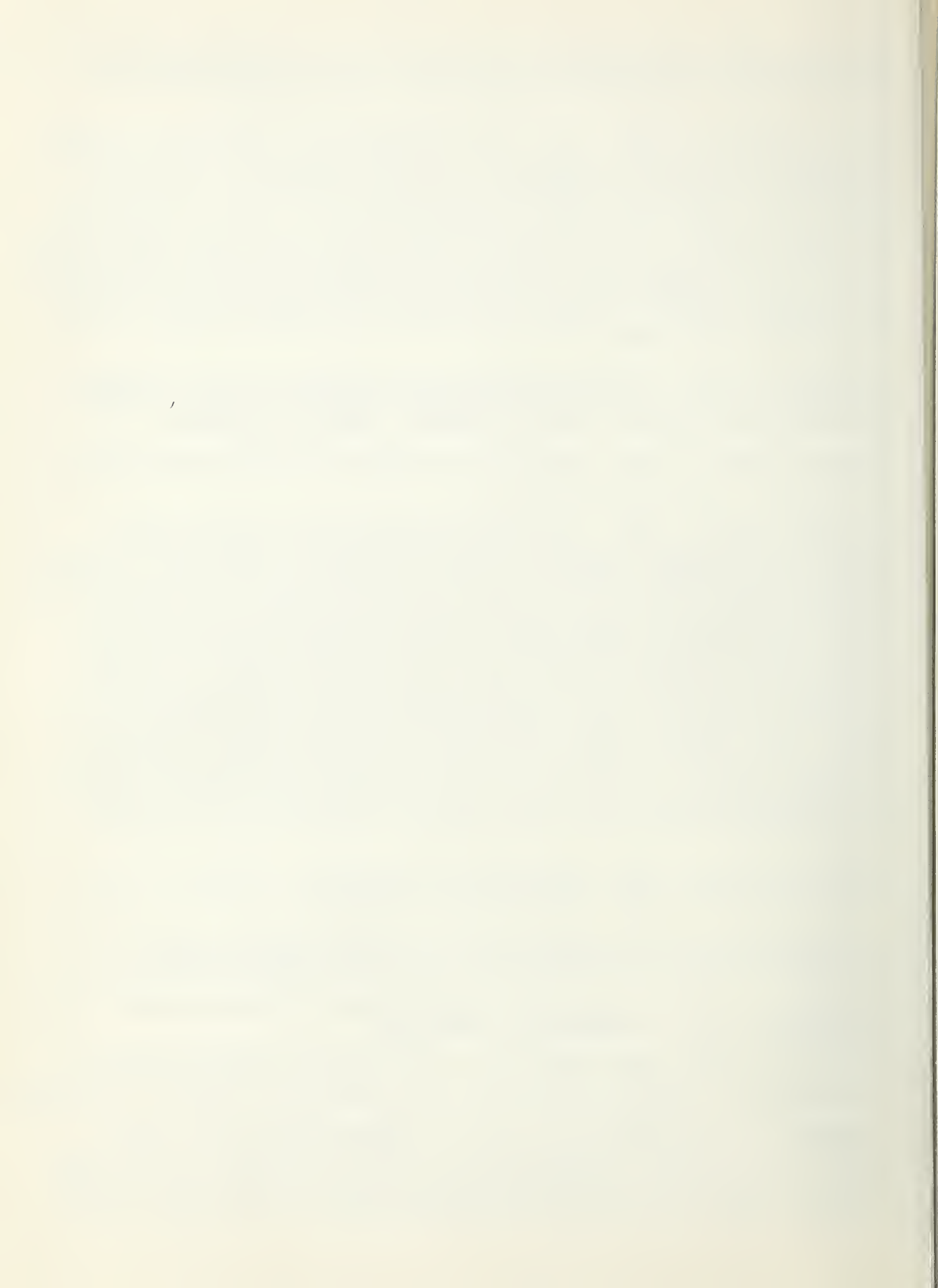
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shorter and more compact than sound carrot plants. Root-knot lesion at the lettuce plants remains easily unnoticed by the planter, as the roots remain in the soil after the crop has been brought in. Above ground level the infestation in the case of lettuce plants may be observed only through reduced leaf development, when the larva invasion occurs to very young lettuce plants. Through soil disinfection with DD or, respectively, Vapam has been attained a considerable respectively 100% sanitation from this soil infecting *Meloidogyne* hapla. The oviferous female larvae with various host plants attain various sizes in body growth.

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Hayslip, N. C. and A. E. Kretschmer, Jr. 1957. "Vegetable-pasture rotation for sandy soil." Annual Report of the Fla. Agr. Exp. Stations. 280-281. The effect on nematodes will be assembled; the continued survey of the area revealed 15 different species. None of the populations was large enough to cause damage to crops.

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Janetschick, Heinz. 1957. "Zoologische Ergebnisse einer Studienreise in die Spanische Sierra Nevada (Vorläufige Mitteilung)." (Zoological results of a research expedition to the Spanish Sierra Nevada. Preliminary communication.) Publ. Inst. Biol. Aplicada (Barcelona). 26:135-153. A summary of results published by different specialists, or in publication, on Nematoda, Oligochaeta, snails, woodlice, arachnids and insects, with emphasis on geographical significance of certain species. The number of endemics is high; boreal-alpine species and species with a disjunct area in Sierra Nevada and in the Atlas are few. Notwithstanding that elevation surpasses 3000 m, a real high mountain fauna is not very well-developed. Historical factors and a low rainfall and strong insolation afford an explanation. Melanic or dwarf forms are common in some groups.

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Janzen, G. J. 1958. "Susceptibility of potatoes." (In Dutch). T.N.O. -Nieuws 13(12):579-583. *Heterodera rostochiensis*.

Jefferson, R. N., Deal, A. S., and Sher, S. A. 1959. "Turfgrass and *Dichondra* pests in Southern California." Turfgrass Cult. 9(2):9-15. Nematodes and Turf. A number of plant parasitic nematodes parasitize turf and *dichondra*. Unthrifty turf and *dichondra* of undetermined cause examined from many areas in southern California over the last few years all had plant parasitic nematodes present. Sixteen species of parasitic nematodes in 11 genera have been found. How many of these is not known, and investigations on plant parasitic nematodes and treatment for nematode infestations are being conducted at Riverside.

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Jenkins, W. R. 1958. "Nematodes associated with field crops." Md. Agr. Soc. & Md. Farm Bur. Rpt. 43:123-124.



Jenkins, W. R. 1959. "How to (?)rid established plants of nematodes." American Rose Magazine. XV(3):10,31. A popular note on the use of Nemagon, Fumazone and Nemaflume; properly applied, these materials will control most important species of nematodes.

Jensen, Harold J., Smithson, H. R. & Loring, L. B. 1958. "Potato-rot nematode, *Ditylenchus destructor* Thorne 1945, found in Dahlia roots." Plant Dis. Rptr. 42(12):1357-1359.

Jensen, Harold J., J. P. Martin, C. A. Wismer and H. Koike. 1959. "Nematodes associated with varietal yield decline of sugar cane in Hawaii." Plant Dis. Repr. 43(2):253-260.

Johnson, A. A. 1956. "Life history studies on *hydromermis contorta* (Kohn), a nematode parasite of *Chironomus plumosus* (L.)" Dissertation Abstracts. 16(2): 409-410. *Hydromermis contorta* has now been found in *Chironomus plumosus* larvae in mid-western lakes of the U.S.A. and especially in Lake Manitou, Indiana. The life-history of the American form is similar to that reported for the European form. The effect of the parasite on its host is very marked especially in the reduction of the fat bodies. The sperm of *H. contorta* is flagellated as in *Hexamermis albicans*.

Johnson, H. G. 1957. "Soybean cyst nematode." Nowest. Crop Impr. Assoc. Ext. Conf. (Rpt.). 9.

Johnson, Leander F. 1959. "Effect of the addition of organic amendments to soil on root knot of tomatoes. I. Preliminary report." Plant Dis. Repr. 43(10): 1059-1062.

Johnson, W. A., and Ware, L. M. 1958. "Bean and squash yields upped by soil fumigation." Highlights Agr. Res. (Ala. Sta.) 5(4):14. Root knot nematode control.

Johnston, Titus M. 1958. "Antibiosis of *Clostridium butyricum* to the rice nematode in submerged soil." Dept. of Plant Pathology Unpublished Thesis Louisiana State Univ. 3 pgs.

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Jones, F. G. W. 1956. "Nematology Department." Report of Rothamsted Exp. Station. 121-126. During 1956 work in the Nematology Dept., Rothamsted has been undertaken on various non-cyst-forming and other soil nematodes, on various species of Heterodera, and on some of the predators of the Heteroderidae. Certain nematode parasites of *Drosophila* have been studied and a revision of the taxonomy of the Mermithidae has been undertaken.

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Jones, F. G. W. 1959. "Ecological relationships of nematodes." Plant Pathology Problems and Progress 1908-1958. Madison, Wisc., 588 pp. Chap. XXXV:395-411.

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Jones, J. E. & Newsom, L. D. 1956. "Effect of soil fumigation for control of the reniform nematode, *Rotylenchulus reniformis* on yield and lint characters of upland cotton." Proc. Assoc. Southern Agr. Workers. 53rd Annual Convention 64-65. In 1953-55 the authors investigated the effect of soil fumigation on yield, boll and lint characters of a number of wilt-resistant and wilt-susceptible cotton varieties grown on small field plots in an area of the Louisiana heavily infested with *Fusarium* wilt and the reniform nematode. The fumigant is not named and dosage rates are not given. In general, significant increases in yield and boll size resulted from fumigation; yield increases, being greater in the case of the susceptible varieties, were attributed to direct control of nematodes with indirect control of wilt. The smaller yield increases for resistant varieties were ascribed mainly to nematode control.

Jones, J.E., Wright, S. L., and Newsom, L. D. 1958. "Sources of tolerance and inheritance of resistance to root-knot nematode *Meloidogyne incognita* in cotton." Cotton Impr. Conf. Proc. 11:34-39.

Jones, J. E., L. D. Newsom, and Etta L. Finley. 1959. "Effect of the reniform nematode on yield, plant characters, and fiber properties of upland cotton." Agron. Jour. 51(6):353-356. Effects of large populations of the reniform nematode on growth and development of cotton were studied in the greenhouse in absence of *Fusarium* wilt and in the field at Baton Rouge, Louisiana from 1953 through 1956 in combination with and in absence of wilt. Studies made in the greenhouse with essentially a pure culture of the nematode showed that it reproduces abundantly on cotton and is capable of causing serious injury. Under field conditions, it caused an appreciable reduction in yield for all varieties tested. It also caused a delay in maturity, a reduction in size of boll, and in some years a reduction in lint percent. It had little or no effect on size of seed, fiber length, fiber strength, and fiber fineness. The reniform nematode increased wilt development on wilt-susceptible varieties, but unlike the root-knot and sting nematode, it did not increase the incidence of wilt on any of the wilt-resistant varieties evaluated.

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The differential free energy, enthalpy, and entropy of adsorption was calculated at various surface concentrations from isotherm data obtained, at 28.0° and 15.6°C. These data indicate that, in the region of multilayer adsorption, the adsorbate assumes liquid-like properties in both montmorillonite and kaolinite systems. In both systems, multi-layer formation was initiated before 0 - 1. In the kaolinite system the thermodynamic functions suggest that the adsorptive forces for EDB vapor are less energetic but more homogeneous over a large 0 range when compared with the montmorillonite system.

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first 3 materials. Populations of plant parasitic nematodes in turf plots treated with 4 gal. per acre of Nemagon emulsion were significantly below those of control plots after 4 months, but not after 6 months, while populations in turf plots treated with 20 or 40 pounds of PRD were significantly below those of control plots after 2 months, but not after 4 months.

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Miles, H. W. 1957. "Crop protection." Nature. 179:1339-1340. During the symposium, a number of reports on control of eelworms were presented. It was reported that even an efficient nematocide such as DD may give results that vary from place to place depending upon the nature of the soil. The main factor appears to be the water content. This report was in reference to the potato root eelworm. With regard to anguilluline eelworms in nursery stock, flower crops and carrots, DD was the most reliable nematocide. Ethylene dibromide was very effective against root knot eelworm under glass. It was noted that the use of sodium methyl dithiocarbamate appeared to be very promising.

Miller, H. N. 1956. "Nematode studies and control on ornamental foliage plants." Report of Florida Agr. Exp. Stations. p. 116. Pre-planting soil drenches of Nemakril, V-C 13 and Vapam reduced nematode populations but did not eradicate them.

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Miller, P. M. and E. M. Stoddard. 1958. "Increasing the hatching of eggs of cysts and root-knot nematodes with NABAM." Science. 128(3336):1429-1430. Nabam in water solution retards hatching of *Meloidogyne* eggs. In soil nabam increases egg hatching of *Meloidogyne* & *H. tabacum* indicating that a decomposition product in soil is a hatching factor. Because of this, combining nabam with a nematocide increases control by exposing more larvae, etc.

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into four parts; single prodelphic reflexed ovary, posteriorly situated vulva, presence of uterine glands; single outstretched testis in the male, unequal spicules, rudder-shaped gubernaculum, and numerous caudal papillae in the male tail. The species is ovoviviparous. The new genus is compared with other genera of the Panagrolaiminae and with *Brevibucca* Goodey, 1935.

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- Siddiqi, M. Rafiq. 1959. "Studies on Xiphinema spp. (Nematoda: Dorylaimoidea) from Aligarh (North India), with comments on the genus Longidorus Micoletzky, 1922." Proc. of the Helminthological Soc. of Wash. 26(2):151-163.
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- Skarbilovich, T. S. 1950. "Postembryonic development of the beet nematode, Heterodera schachtii Schmidt, 1871." Trudy Gel'mint. Lab. Akad. Nauk SSSR." 3:210-220.
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- Slack, D. A. and M. L. Hamblen. 1959. "Factors influencing emergence of larvae from cysts of Heterodera glycines, Ichinohe." Phytopathology 49(5):319-320.
- Slack, D. A. 1959. "Damage to soybeans by the soybean-cyst nematode." Arkansas Farm Research. 8(5):2.
- Slootweg, A. F. G. 1958. "Enkele ziekteproblemen bij bloembollen." (Some problems regarding diseases of flower bulbs.) Tijdschr. Planteziekten. 64(5/6):445-451. Fusarium culmorum causing a root rot of hyacinths, is controlled by soil disinfection with formaldehyde just before planting. On heavily infested soils, fumigation with Chlorobromopropene, and under favorable conditions Vapam in combination with formaldehyde treatment, give more satisfactory results. Basal rot of tulips caused by Fusarium oxysporum is controlled by dipping the planting stock in Hg compounds. The condition of temperature and humidity at the end of the growing period and during storage are of more importance. Tulip fire (Botrytis tulipae) can be controlled by retardation of the crop in spring by storage at 20-23°C of the planting stock in the preceding autumn to prevent damage by night frost; also by spraying with carbamates. Ditylenchus dipsaci on narcissus is almost completely

eradicated by giving the bulbs a hot water treatment and by fumigation of the soil. *Pratylenchus penetrans* (root rot of daffodils) and *P. robustus* (root rot of lilies) are well controlled by soil treatment with DD.

Small, H. G. 1958. "Cyst nematode (*Heterodera glycine*) No. 1 soybean threat." *Crops & Soils* 11(2):9-10, 16, map.

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Smith, Harlan E. and Don C. Norton. 1959. "Plant nematodes. Their identification and control." *Texas Agricultural Extension Service MP-356*. 2-8.

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Southey, J. F. 1958. "New host records for root-knot eelworms." *Plant Pathology* (London). 7(3):114. *Meloidogyne incognita* var. *acrita* has been identified from root galls of *Hoya* sp. received in 1952 from a Surrey glasshouse. Another root-knot eelworm, *M. hapla* Chitwood was found in root galls on the following plants from two nurseries in East Suffolk: several *Clematis* hybrids grafted on *C. vitalba* L. in 1956, both stock and scion roots being infested; and *Clematis* Mme Edouards Andre in 1957 from the first nursery; *Antennaria dioica* (L.) Gaertn. in 1956, and *Diervilla x styriaca* Hort. in 1957 from the second nursery. The *Antennaria* were pot-grown in cold frames from divisions of outdoor parent plants and the *Diervilla* was grown out of doors.

_____. 1958. "New eelworm host records (*Heterodera cacti* Filipjev and Sch. Stekhoven)." *Plant Pathology*. 7(4):152. *H. cacti* Filipjev and Sch. Stekhoven, the cactus root eelworm, was found on *Mammillaria confusa* Orcutt (two plants), *Trichocereus spachianus* Riccob., and a species of *Gymnocalycium* (probably *G. multiflorum* Britton and Rose) in 1957. The four plants were a sample from about 200 intended for export.

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Spears, J. F. 1959. "The nematode problem." Agr. Chem. 14(1):39-41, 111-112. Use of nematodes of the family Steinernematidae for biological control of harmful insects is described. Crop rotation and measures taken by the Federal Government for controlling species of nematodes injurious to plants are discussed. The use of D-D against the golden nematode is described.

Spears, Joseph F. 1959. "The nematode problem." Agric. Chemicals. 14(2): 36-38. The effects of the following nematodes on their hosts are reviewed: soybean cyst nematode, burrowing nematode, potato rot nematode and tobacco cyst nematode. Regulatory and control programs undertaken by the Federal and State Governments against these pests are discussed.

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_____. 1959. "Der Kartoffelnematode, eine schleichende Gefahr für den Kartoffelbau." Prakt. Bl. f. Pflanzenbau u. Pflanzenschutz. 54(1):11-40.

Srivastava, A. S. and Katiyar, K. P. 1956. "Effects of diazinon, salicylic acid and benzoic acid on wheat nematode." Proc. of Indian Science Congress. 43rd.(1956)Part III:286. Of various chemicals tested in the laboratory 0.1% diazinon, 0.03% benzoic acid and 0.05% salicylic acid in aqueous solution were the most promising in their lethal effect on Anguillulina tritici. They are being tested in the field as the infection is common in the wheat crop in the western district of Uttar Pradesh.

Srivastava, A. S. & Saxena, H. P. 1956. "Effects of diazinon on paddy nematodes." Part III. Proc. of Indian Science Congress. 43rd(1956):286. When sprayed on the soil in paddy crops. 0.05% emulsion of diazinon completely controlled the eelworms in 72 hours. Its residual properties are being investigated.

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Staniland, L. N. 1959. "Contact nematicides." Plant Nematology Ministry of Agriculture, Fisheries & Food. Tech. Bull. #7:141-147. Discussion of soil fumigation, techniques and double treatment.

_____. 1959. "The principles of the hot-water treatment of plants." Plant Nematology Ministry of Agriculture, Fisheries & Food. Tech. Bull. #7. 147-156.

Stapel, C. 1958. "Advantages and disadvantages of rape culture from the crop rotation point of view." (In Danish). Tidsskr. f. Frøavl. 24(2):17-19. Transmission of nematodes and diseases.

_____. 1958. "Advantages and disadvantages of rape culture in crop rotation." (In Danish). Dansk Frøavl. 41(15):251-252. Transmission of nematodes.

- Stapel, C. 1958. "Grain culture, oat nematodes and foot rot." (In Danish) Landbonyt 12(7):305-308.
- Steele, Arnold E. and J. M. Good. 1958. "Evaluation of several nematocides for control of sting nematodes on lima beans." Plant Dis. Repr. 42(11): 1284-1287.
- Steiner, G. 1958. "Monhystera cameroni n. sp.--a nematode commensal of various crustaceans of the Magdalen Islands and Bay of Chaleur (Gulf of St. Lawrence)." Canadian Jour. Zool. 36(3):269-278. The known cases of monhysterid nematodes showing commensalism with crustaceans are reviewed and a new one, that of *M. cameroni* described. Its relationship to *M. socialis* Bütschli, of Chitwood, 1951) is discussed. *M. chitwoodi* is established as a separate species. It is proposed to replace the term "caudal" glands by that of "foot" glands for reasons of clarity and comparative morphology. The reduction of the foot gland system from a 3 to a 2 cell complex as here observed is interpreted. Its possible significance for the concept that the phasmids are modified foot glands is expounded. The occurrence of microsporidial parasites in *M. cameroni* is mentioned.
- Stelmach, Z. 1959. "Bromine retention in some soils and uptake of bromine by plants after soil fumigation." Soil Science. 88(2):61-66.
- Stephens, Pauline T. 1959. "Now's the time. Notice nematode damage." Georgia Farmer. p.11. Popular type article describing how to detect nematodes.
- Stettmeier, W. 1957. "Bekämpfung des Wurzelgallenälchens Meloidogyne im Gemüsebau mittels Natriummethyldithiocarbamat." Pflanzenschutz. 9(12): 183-184.
- Stockli, A. 1957. "Über das Vorkommen der freilebenden, pflanzenparasitären Ringnematoden in Wiesen und Ackerland." Landwirt. Jahrb. der Schweiz. 71(8): 963-977.
- Sudakova, I. M. 1957. "Natural laws and factors in the dynamics of the nematode fauna of perennial onions." (In Russian). Proc. Sci. Conf. All-Union Soc. Helminth., 40th Ann. Gt. Oct. Social. Revol. Dec. 11-15, 1957. Part II. 94-95.
- Suit, R. F. DuCharme, E. P., & Brooks, T. L. 1956. "Nature, causes and control of citrus decline." Report of Fla. Agr. Exp. Stations. Year 1955-56. 166-168. Suit et al mention the auger method which has been developed for sampling the roots of citrus trees for nematodes. *Radopholus similis* parasitized sour orange seedlings in all of three types of soil tested. Experimental evidence suggested that there were three physiological races of *R. similis* separable by their ability to parasitize banana, citrus or both.
- Suit, R. F., Hanks, R. W. & Tarjan, A. C. 1956. "Control of spreading decline of citrus." Report of Fla. Agr. Exp. Stations. Year 1955-56. 188-190. Citrus groves were successfully treated for *Radopholus similis* infection with D-D by the pull and treat method. Suit et al, describe experiments now in progress on the nematicidal treatment of soil around citrus trees. The nematicidal strength of aqueous preparations was reduced by about 95% after passage through 5 ft. of pre-wetted soil but remained relatively constant after passage through soil of low moisture content.

Suit, R. F. and E. P. DuCharme. 1957. "Nature, causes and control of citrus decline." Annual Report of the Florida Agr. Exp. Stations. Year 1956-1957. p192.

Suit, R. F., R. W. Hanks and A. C. Tarjan. 1957. "Control of spreading decline of citrus." Annual Report of the Florida Agr. Exp. Stations. Year 1956-1957. 209-211. Discussion of pre-planting treatments with 11 nematocides, barriers, disinfection of equipment and systemic control studies.

Sylvain, Pierre G. 1959(?). "The problem of nematodes in coffee production." Coffee (Turrialba, Costa Rica). 1(1):2-13.

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_____, and others. 1958. "Potato tuber rot caused by *Pratylenchus* sp." (In Japanese) Kyushu Agr. Res. 20:102-103.

Tarjan, A. C. 1956. "The biology of nematodes associated with citrus." Report of Fla. Agr. Exp. Stations. Year 1955-56. 191-193. A device is illustrated for collecting nematodes from citrus roots and soil and 34 genera of nematodes are listed which were collected from soil adhering to mechanical grove equipment. *Radopholus similis* found on sugar-cane readily infected citrus roots.

Tarjan, A. C. and C. I. Hannon. 1957. "The biology of nematodes associated with citrus." Ann. Report of the Fla. Agr. Exp. Stations. Year 1956-57. 212-214.

Tarjan, A. C. 1959. "Pressure injection of chemicals for possible systemic action against burrowing nematodes infecting citrus." Plant Dis. Repr. 43(4): 451-458.

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Taylor, A. L. 1958. "Undeveloped nematocide markets." (Sum.) Farm Chem. 121(12):38.

Taylor, A. L. 1958. "Nematode problems in corn production." Proc. 13th Ann. Hybrid Corn Industry-Research conference, 1958. Publication No. 13. 81-83.

_____. 1959. "Nematodes in 1959." Arborist's News Pub. by Nat. Shade Tree Conference. 24(6):41-43. Presented at Southern Chapter, N.S.T.C. Williamsburg, Va., Feb. 1959. General article on effect and control of parasitic nemas attacking shade trees - root-knot root-lesion, dagger, lance, and spirals mentioned.

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Witkowski, Tadeusz. 1958. "Pionowe Rozmieszczenie Nicieni W Glebie Trzech Roznych Upraw Rolniczych." Zesz. Nauk. UMK, Mat. Przyr. Zeszyt 3: 61-101. Observations on the vertical distribution of nemas in the soil of three field cultures. 92 species of free-living and parasitic nematodes were found; most abundant and frequent; found was *Chiloplacus propinquus*.

Wu, Liang-Yu. 1958. "Morphology of *Ditylenchus destructor* Thorne, 1945 (Nematoda: Tylenchidae), from a pure culture, with special reference to reproductive systems and esophageal glands." Canadian Jour. Zool. 36(4):569-576. Specimens of a pure line population of *D. destructor* were studied. The female reproductive system is well differentiated into the ovary, oviduct, and uterus. The last is further differentiated into the seminal receptacle, quadricolumella, and uterus proper. There is a postuterine pouch, and this, with the vulva, is also described. The functional regions of the male reproductive system are distinct: the testis, vas deferens, seminal vesicle, and ejaculatory duct. The posterior ends of the 2 sub-ventral esophageal glands extend caudad to about the same level, each with a small nucleus. The large dorsal gland, with a conspicuous, larger nucleus, extends behind the esophago-intestinal junction. The esophageal tube leaves the esophagus on the inner surface of the dorsal gland, just behind the sub-ventral glands, where it joins the intestine. A pair of very small cells guard the entrance of the esophagus into the intestine.

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